IN THE CLAIMS:

Please amend Claims 1, 4, 8, 10, 11, 13, 15, 17, 19, 21, 23, 37, 40-42, 44, 47, 48, 51-53, 56-59, 61-64, 66 and 67 as follows. A marked-up copy of Claims 1, 4, 8, 10, 11, 13, 15, 17, 19, 21, 23, 37, 40-42, 44, 47, 48, 51-53, 56-59, 61-64, 66 and 67 showing the changes made thereto, is attached. Note that all the claims currently pending in this application, including those not presently amended, have been reproduced below for the Examiner's convenience.

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1. (Twice Amended) A transparent type optical element comprises a reflection preventive light-shielding member comprising a metal at the periphery of an effective area of the optical element,

wherein said light is transmitted through said effective area.

3. (Not Further Amended) An optical element according to Claim 1, wherein the reflection preventive light-shielding member is composed of one of a low-reflection chromium layer, and a multilayer film of a chromium oxide layer and a metallic chromium layer.

4. (Twice Amended) A transparent type optical element provided with a reflection preventive light-shielding member comprising a ceramic material at the periphery of an effective area of the optical element,

wherein said light is transmitted through said effective area.

5. (Unamended) An optical element according to Claim 4, wherein the ceramic material is composed of at least one of TiC, TiN, ZrC, ZrN, HfC and HfN.

6. (Unamended) An optical element according to Claim 4, wherein the ceramic material is a material that absorbs the wavelength to be used.

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7. (Not Further Amended) An optical element according to Claim 1, wherein an alignment mark is provided on the light-shielding member.

8. (Twice Amended) A transparent type optical element provided with a reflection preventive light-shielding member composed of a light-shielding ink and an alignment mark at the periphery of the optical element,

wherein said light is transmitted through an effective area of the optical element.

9. (Not Further Amended) An optical element according to Claim 8, wherein the light-shielding member and alignment mark are provided by printing.

10. (Amended) An optical member according to Claim 9, wherein light does not protrude through portions of the optical member where the light-shielding ink used for printing is illuminated.

11. (Twice Amended) A transparent type optical element provided with an effective area and a reflection preventive light-shielding area in the periphery of the effective area, the reflection preventive light-shielding area blocking UV-laser light with a wavelength of 250 nm or less and generating no undesirable substances when irradiated by laser light,

wherein said light is transmitted through said effective area.

12. (Unamended) An element according to Claim 11, wherein the light-shielding area is composed of at least one of a metal and a ceramic.

13. (Twice Amended) A transparent type optical element provided with an effective area and a reflection preventive light-shielding area in the periphery of the effective area, the reflection preventive light-shielding area blocking UV light and generating no undesirable substances due to irradiation by the UV light,

wherein said light is transmitted through said effective area.

14. (Unamended) An element according to Claim 13, wherein the light-shielding area is composed of at least one of a metal and a ceramic.

15. (Twice Amended) A transparent type optical element provided with an effective area and a reflection preventive light-shielding area in the periphery of the effective area, the reflection preventive light-shielding area blocking radiation energy and generating no undesirable substances when irradiated,

wherein said light is transmitted through said effective area.

16. (Unamended) An element according to Claim 15, wherein the light-shielding area comprises at least one of a metal and a ceramic.

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17. (Twice Amended) A transparent type optical element provided with an effective area and a reflection preventive light-shielding area in the periphery of the effective area, the reflection preventive light-shielding area blocking UV laser light with a wavelength of 250 nm or less and being resistant to the laser light,

wherein said light is transmitted through said effective area.

18. (Unamended) An element according to Claim 17, wherein the light-shielding area comprises at least one of a metal and a ceramic.

19. (Twice Amended) A transparent type optical element provided with an effective area and a reflection preventive light-shielding area in the periphery of the effective area, the reflection preventive light-shielding area blocking UV light and being resistant to the UV light,

wherein said light is transmitted through said effective area.

20. (Unamended) An element according to Claim 19, wherein the light-shielding area comprises at least one of a metal and a ceramic.

21. (Twice Amended) A transparent type optical element provided with an effective area and a reflection preventive light-shielding area in the periphery of the effective area, the reflection preventive light-shielding area blocking radiation energy and being resistant to the radiation energy,

wherein said light is transmitted through said effective area.

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22. (Unamended) An element according to Claim 21, wherein the light-shielding area comprises at least one of a metal and a ceramic.

23. (Twice Amended) A transparent type optical element provided with an effective area and a reflection preventive light-shielding member comprising an inorganic material at the periphery of an optical element,

wherein said light is transmitted through said effective area.

24. (Unamended) An optical element according to Claim 23, wherein the material comprises a thin film ceramic.

25. (Unamended) An optical element according to Claim 24, wherein the material comprises at least one of TiC, TiN, ZrC, ZrN, HfC and HfN.

26. (Unamended) An optical element according to Claim 23, wherein the material comprises metallic materials.

28. (Not Further Amended) An optical element according to Claim 26, wherein the material comprises at least one of chromium, aluminum, molybdenum, tantalum and tungsten.

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29. (Not Further Amended) An optical element according to Claim 26, wherein the material is subjected to a reflection preventive treatment, the reflection preventive treatment comprises a laminated structure of a metal oxide layer on the light-shielding member.

30. (Not Further Amended) An optical element according to Claim 29, wherein the metal oxide layer comprises at least one of silicon oxide and aluminum oxide.

31. (Unamended) An optical element according to Claims 23, wherein the material comprises a compound of a metal and silicon.

32. (Unamended) An optical element according to Claims 31, wherein the material comprises a compound of at least one of molybdenum and tungsten, and silicon.

33. (Unamended) An optical element according to Claims 23, wherein the material comprises a semiconductor material.

34. (Unamended) An optical element according to Claims 33, wherein the material comprises silicon.

35. (Unamended) An optical element according to Claims 23, wherein the material of the light-shielding member comprises a metal oxide.

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36. (Unamended) An optical element according to Claims 35, wherein the material of the light-shielding member comprises titanium oxide.

37. (Twice Amended) An element according to any one of Claims 1, 4, 8, 11, 13, 15, 17, 19, 21 and 23, wherein said effective area is the center part of said optical element and in said center part the diffraction grating is formed.

38. (Not Further Amended) An element according to any one of Claims 1, 4, 8, 11, 13, 15, 17, 19, 21 and 23, wherein said element is a diffractive optical element.

39. (Not Further Amended) An optical system having the optical element according to any one of Claims 1, 4, 8, 11, 13, 15, 17, 19, 21 and 23.

40. (Twice Amended) An illumination apparatus illuminating a face utilizing an optical system containing the optical element according to any one of Claims 1, 4, 8, 11, 13, 15, 17, 19, 21 and 23.

41. (Twice Amended) A projection exposure apparatus for illuminating a pattern on a first subject by taking advantage of a light flux via a projection optical system containing the optical element according to any one of Claims 1, 4, 8, 11, 13, 15, 17, 19, 21 and 23, thereby projecting and exposing the pattern on the first subject on a substrate face with the projection optical system.

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42. (Twice Amended) A method for manufacturing a device, wherein a pattern on a mask is illuminated by taking advantage of the light flux via an optical system containing the optical element according to any one of Claims 1; 4, 8, 11, 13, 15, 17, 19, 21 and 23, the device being manufactured via a development step after exposing a wafer face with the pattern.

43. (Unamended) An optical element according to Claim 7, wherein the light-shielding member and alignment mark are provided by printing.

44. (Amended) An optical element according to Claim 43, wherein light does not protrude through portions of the optical member where a light-shielding ink used for printing is illuminated.

45. (Unamended) An optical element according to Claim 4, wherein an alignment mark is provided on the light-shielding member.

46. (Unamended) An optical element according to Claim 45, wherein the light-shielding member and alignment mark are provided by printing.

47. (Amended) An optical element according to Claim 46, wherein light does not protrude through portions of the optical member where a light-shielding ink used for printing is illuminated.

48. (Amended) A diffractive optical element comprising a light-shielding area at a periphery of an effective area of the diffractive optical element,

wherein said optical element has an alignment mark in an area where the light is shielded by said light shielding area.

49. (Unamended) An optical system having the diffractive optical element according to Claim 48.

50. (Unamended) An illumination apparatus illuminating a face utilizing the optical element according to Claim 48.

51. (Amended) A projection exposure apparatus for illuminating a pattern on a first subject by taking advantage of a light flux via a projection optical system containing the optical element according to Claim 48, thereby projecting and exposing the pattern on the first subject on a substrate face with the projection optical system.

52. (Amended) A method for manufacturing a device, wherein a pattern on a mask is illuminated by taking advantage of a light flux via an optical system containing the optical element according to Claim 48, the device being manufactured via a development step after exposing a wafer face with the pattern.

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53. (Amended) A diffractive optical element comprising a light-shielding area at a periphery of an effective area of the diffractive optical element,

wherein said optical element has an alignment mark in said light shielding area.

54. (Unamended) An optical system having the diffractive optical element according to Claim 53.

55. (Unamended) An illumination apparatus illuminating a face utilizing the optical element according to Claim 53.

56. (Amended) A projection exposure apparatus for illuminating a pattern on a first subject by taking advantage of a light flux via a projection optical system containing the optical element according to Claim 53, thereby projecting and exposing the pattern on the first subject on a substrate face with the projection optical system.

57. (Amended) A method for manufacturing a device, wherein a pattern on a mask is illuminated by taking advantage of a light flux via an optical system containing

the optical element according to Claim 53, the device being manufactured via a development step after exposing a wafer face with the pattern.

58. (Amended) An optical element comprising a reflection preventive light-shielding area at a periphery of an effective area of the optical element,

wherein said optical element is a transparent type and incident light penetrates said effective area.

59. (Amended) An optical system having a diffractive optical element according to Claim 58.

60. (Unamended) An illumination apparatus illuminating a face utilizing the optical element according to Claim 58.

61. (Amended) A projection exposure apparatus for illuminating a pattern on a first subject by taking advantage of a light flux via an optical system containing the optical element according to Claim 58, thereby projecting and exposing the pattern on the first subject on a substrate face with a projection optical system.

62. (Amended) A method for manufacturing a device, wherein a pattern on a mask is illuminated by taking advantage of light flux via an optical system containing the optical element according to Claim 58, the device being manufactured via a development step after exposing a wafer face with the pattern.

63. (Amended) An optical element comprising a reflection preventive light-shielding member at a periphery of an effective area of the optical element,

wherein said optical element is a transparent type and penetrates the light incident to said effective area.

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64. (Amended) An optical system having the an optical element according to Claim 63.

65. (Unamended) An illumination apparatus illuminating a face utilizing the optical element according to Claim 63.

66. (Amended) A projection exposure apparatus for illuminating a pattern on a first subject by taking advantage of a light flux via a projection optical system containing the optical element according to Claim 63, thereby projecting and exposing the pattern on the first subject on a substrate face with the projection optical system.

67. (Amended) A method for manufacturing a device, wherein a pattern on a mask is illuminated by taking advantage of a light flux via an optical system containing the optical element according to Claim 63, the device being manufactured via a development step after exposing a wafer face with the pattern.

Please add Claims 68 through 70 as follows:

68. (New) An imaging optical system having the optical element according to any one of Claims 1, 4, 8, 11, 13, 15, 17, 19, 23, 48, 53, 58 and 63.

69. (New) A projection optical system having the optical element according to any one of Claims 1, 4, 8, 11, 13, 15, 17, 19, 23, 48, 53, 58 and 63.

70. (New) An illumination optical system having the optical element according to any one of Claims 1, 4, 8, 11, 13, 15, 17, 19, 23, 48, 53, 58 and 63.

REMARKS

Claims 1, 3-26 and 28-70 are now presented for examination. Claims 1, 4, 8, 10, 11, 13, 15, 17, 19, 21, 23, 37, 40-42, 44, 47, 48, 51-53, 56-59, 61-64, 66 and 67 have been amended to define still more clearly what Applicants regard as their invention, in terms which distinguish over the art of record. Claims 68-70 have been added to assure Applicants of the full measure of protection to which they deem themselves entitled. Claims 1, 4, 8, 11, 13, 15, 17, 19, 21, 23, 48, 53, 58 and 63 are the only independent claims.

Claims 10, 40-42, 44, 47, 51, 52, 56, 57, 61, 62, 66 and 67 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. With regard to the claims as amended by this amendment, this rejection is respectfully traversed.

Claims 10, 44 and 47 have been objected to in that the limitation "wherein the portions where the light-shielding ink does not protrude" is unclear as to what structure feature is claimed. As amended, Claim 10 recites more clearly that light does not protrude